

Executive Summary

The Purpose of this Trends Report

The National Priority Chemicals (PCs) Trends Report is intended primarily to 1) evaluate the progress made in achieving EPA's Government Performance Results Act (GPRA) national goal of a 10 percent reduction of PCs (Exhibit 1) in wastes by 2008, compared to the 2001 quantities and 2) provide information and trends on the quantities (aggregated and non-aggregated) and management methods of the PCs contained in hazardous wastes (Resource Conservation and Recovery Act (RCRA) Subtitle C) and non-hazardous industrial wastes (RCRA Subtitle D) for the nation, EPA Regions, States, industry sectors, and federal facilities to assist in identifying potential waste minimization opportunities to reduce these chemicals. The data and trends analyses developed for this report supports this program and helps us better understand trends in the generation and management of the PCs, assess chemical reduction priorities, and identify opportunities for eliminating or reducing the PCs. The 31 PCs consist of 28 organics and 3 metals/metal compounds that are frequently found in releases to water, air, and land. These chemicals are present in soil, sediment, ground water, surface water, air, and/or biota, with many serving as the basis for a waste being classified as hazardous. The PCs are frequently found in wastes (hazardous and non-hazardous) and likely present opportunities for PC reductions in the manufacturing, commercial, and government operations that generate these wastes.

Exhibit 1. Priority Chemicals in the National Partnership for Environmental Priorities (NPEP) Program

Priority Chemicals Reported to the Toxics Release Inventory (TRI)	
1,2,4 - Trichlorobenzene	Lindane
2,4,5 - Trichlorophenol	Mercury and Mercury Compounds
Anthracene	Methoxychlor
Benzo(g,h,i)perylene	Naphthalene
Cadmium and Cadmium Compounds	Pendimethalin
Dibenzofuran	Pentachlorobenzene
Dioxins and Dioxin-like compounds	Pentachlorophenol
Heptachlor	Phenanthrene
Hexachloro-1, 3-butadiene	*Polychlorinated biphenyls (PCBs)
Hexachlorobenzene	Polycyclic Aromatic Compounds (PACs)
Hexachloroethane	Quintozone
Lead and Lead Compounds	Trifluralin
Priority Chemicals Not Reported to TRI	
1,2,4,5-Tetrachlorobenzene	Endosulfan, alpha, beta-
4-Bromophenyl phenyl ether	Fluorene
Acenaphthene	Heptachlor epoxide
Acenaphthylene	Pyrene
For the purposes of developing this list of 31 chemicals, endosulfan alpha and endosulfan beta were counted together and Heptachlor and Heptachlor epoxide were counted together. Also, each of the three metals (lead, cadmium, and mercury) is combined with its associated metal compounds and addressed as a single PC in this report. For example, Lead and Lead Compounds are addressed as a single PC. Only the weight of the metal portion of metal compounds is reported to TRI.	
*Polychlorinated biphenyls (PCBs) are on the list of PCs and are reported to TRI but this chemical is not included in this Trends report because EPA monitors the management of PCBs under a separate initiative.	

The Trends Report is a tool for identifying opportunities to reduce these PCs in concert with the objectives of the Resource Conservation Challenge (RCC), including assisting EPA in identifying potential partners to voluntarily participate in the National Partnership for

Environmental Priorities (NPEP) program. The EPA's Office of Solid Waste (OSW) is in its third year of implementing the RCC, a program designed in 2002 to reduce the use of raw materials, reuse materials to make new products or generate energy, and reduce the generation of wastes. The RCC's goals are to reduce what comes into the waste management cycle, using pollution prevention, waste minimization, source reduction, and manufacturing process and/or product design changes, when economically feasible.

To support the RCC, OSW launched the voluntary NPEP program. EPA encourages all generators to reduce the quantity of waste they generate. However, we believe that reducing the generation of wastes containing any of these 31 PCs should be the first priority. Of the 31 chemicals identified by EPA as PCs, 24 chemicals are reported to the Toxics Release Inventory (TRI), as required under the Emergency Planning & Community Right to Know Act (EPCRA) § 313. However, since EPA monitors the management of polychlorinated biphenyls (PCBs) under a separate initiative, only 23 of the TRI-reportable chemicals are tracked for the purposes of this Trends Report, including measuring progress toward our GPRA goal. The remaining 7 PCs, not reported to TRI, are not currently tracked. (Exhibit 1).

The NPEP program is one of RCC's tools for "beyond compliance" management of the targeted PCs. EPA recruits partners to participate in NPEP who pledge reductions of PCs through source reduction and/or increased recycling efforts, and then set target deadlines to achieve those reductions. The purpose of this program is to encourage government agencies, businesses, and manufacturers to voluntarily enroll in a partnership with EPA to find ways to minimize the PCs. This reduction preferably should be achieved by reducing the use of these chemicals at the source, whenever possible. When reduction at the source is not possible, environmentally sound recycling practices should be used.

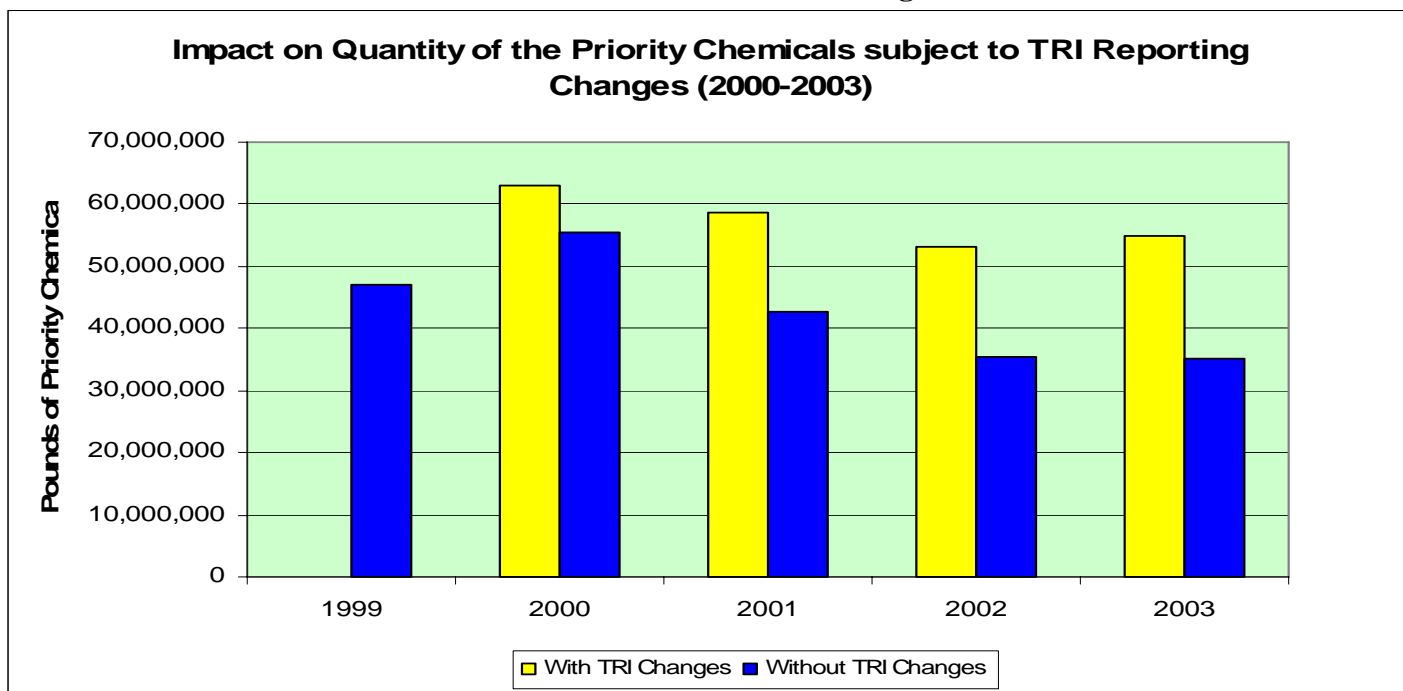
Trends Analyses for the Priority Chemicals (1999-2003)

Summary of Findings and Changes in Trends. We analyze trends for the Priority Chemicals based on the most recent five years of TRI data available. For this Trends Report, the trends analysis is based on data from the 1999 – 2003 TRI reporting years. In 2000 and in 2001 there were significant increases in both the quantities of PCs and the number of reporting facilities compared to 1999. Several changes to TRI reporting requirements caused these increases: 1) In 2000 TRI began requiring reporting for three PCs not previously reported. They are: benzo(g,h,i)perylene, dioxin and dioxin-like compounds, and pentachlorobenzene. In 2000 these three chemicals added 2.3 million pounds to the total quantity of Priority Chemicals in wastes. Between 2000 and 2001 these three chemicals added a total of 1.5 million pounds to the PC quantity reported to TRI. Between 2001 and 2002 they added 0.6 million pounds, and between 2002 and 2003 they added 0.8 million pounds. In total, from 2000 through 2003, the three new chemicals added 5.2 million pounds to the quantity of PCs; 2) Lower TRI reporting thresholds became effective in 2000 for seven other PCs which already were being reported to TRI (See Exhibit 3). They are: heptachlor, hexachlorobenzene, mercury and mercury compounds, methoxychlor, pendimethalin, polycyclic aromatic compounds (PACs), and trifluralin. This change increased the amounts of these chemicals reported to TRI. At the same time, EPA dropped the *de minimis* exemption for these seven PCs, lead and lead compounds, and the three PCs mentioned above that began to be reported to TRI in 2000. The *de minimis* change required reporting of smaller amounts than before, thereby increasing the reported amounts of these chemicals. In 2000, the lowered thresholds and *de minimis* changes added a combined total of

6.5 million pounds to the PC quantity reported to TRI. Between 2000 and 2001 the lowered thresholds and *de minimis* changes added a combined total of 7.3 million pounds to the PC quantity reported to TRI. Between 2001 and 2002 they added 7.8 million pounds, and between 2002 and 2003 they added 8.1 million pounds. From 2000 through 2003 the lowered thresholds and *de minimis* changes combined added 29.7 million pounds to the total quantity of PCs¹; 3) In 2001 EPA lowered the TRI reporting threshold for lead and lead compounds, substantially increasing the number of facilities reporting this PC. However, even with more facilities reporting, reductions at facilities previously reporting to TRI caused the total quantity of lead and lead compounds to decrease by 0.4 million pounds in 2001. From 2002-2003 reported quantities of lead rose somewhat, from 34.9 million pounds to 36.7 million pounds. All told, the quantity of lead reported from 2001 through 2003 increased by 30.4 million pounds.

As the result of the TRI changes, PCs showed a cumulative increase of 65.3 million pounds for the years 2000 through 2003, compared to their 1999 quantities. The effects of these changes in increasing the quantities of chemicals reported to TRI are shown in Exhibit 2 below. It is important to note that the exhibit shows generally downward trends for PCs, whether one examines quantities before the changes or after those changes took effect.

Exhibit 2. Effect of TRI Changes



¹ Because of limitations of the data reported to TRI it is not possible to distinguish increased quantities resulting from the *de minimis* change from those resulting from the threshold change.

Exhibit 3. Priority Chemicals - TRI Reporting Threshold Changes

Chemical Name	New Reporting Threshold	Year Change Became Effective
Heptachlor	10 pounds	2000
Hexachlorobenzene	10 pounds	2000
Lead and Lead Compounds	100 pounds	2001
Mercury and Mercury Compounds	10 pounds	2000
Methoxychlor	100 pounds	2000
Pendimethalin	100 pounds	2000
Polycyclic Aromatic Compounds category	100 pounds	2000
Trifluralin	100 pounds	2000

In 2003, 4 PCs comprised approximately 82 percent of the total national PC quantity. These were lead and lead compounds, polycyclic aromatic compounds, naphthalene, and hexachloro-1,3-butadiene. Lead and Lead Compounds consistently have accounted for the majority of the total national PC quantity -- comprising approximately 46 percent of the total quantity of the PCs in 2003. Nearly 13 million pounds of polycyclic aromatic compounds accounted for approximately 16 percent of the total national quantity of PCs in 2003.

Exhibit 4. Total Quantity (lbs) of each Priority Chemical (1999 – 2003)

CHEMICAL NAME	1999	2000	2001	2002	2003	Percent of Total Quantity in 2003	Percent change (1999-2003)
Lead and Lead Compounds	32,854,376	37,420,838	36,996,580	34,907,262	36,667,276	46.3%	11.6%
Polycyclic Aromatic Compounds	8,354,179	16,569,173	14,115,733	12,771,563	12,672,606	16.0%	51.7%
Naphthalene	13,870,144	14,507,008	10,340,355	11,248,654	10,399,334	13.1%	-25.0%
Hexachloro-1,3-butadiene	8,764,908	11,297,081	6,404,741	5,167,385	5,566,299	7.0%	-36.5%
Hexachlorobenzene	5,401,706	5,934,773	5,765,862	4,208,878	4,272,727	5.4%	-20.9%
Hexachloroethane	3,625,369	5,709,981	4,145,249	4,056,497	2,734,341	3.5%	-24.6%
Phenanthrene	483,969	1,017,328	236,212	2,309,275	1,817,292	2.3%	275.5%
1,2,4 – Trichlorobenzene	1,388,599	1,189,077	2,182,996	1,527,029	1,674,271	2.1%	20.6%
Cadmium and Cadmium Compounds	1,103,788	1,488,696	932,493	749,570	817,579	1.0%	-25.9%
Quintozone	227,081	570,013	491,098	412,230	604,434	0.8%	166.2%
Pentachlorobenzene	0	239,852	487,719	311,156	484,733	0.6%	NA
Pendimethalin	219,791	674,131	200,195	421,827	429,551	0.5%	95.4%
Anthracene	453,254	546,297	360,830	345,482	419,068	0.5%	-7.5%
Benzo(g,h,i)perylene	0	2,104,398	988,675	308,362	315,294	0.4%	NA
Pentachlorophenol	212,995	69,790	54,339	36,856	160,760	0.2%	-24.5%
Dibenzofuran	118,826	92,802	66,720	288,912	75,605	0.1%	-36.4%
Trifluralin	87,820	88,485	93,489	63,555	57,290	0.1%	-34.8%
Mercury and Mercury Compounds	56,701	89,760	130,828	97,130	40,544	0.1%	-28.5%
2,4,5 –Trichlorophenol	26,098	32,443	20,657	17,913	22,857	0.0%	-12.4%

CHEMICAL NAME	1999	2000	2001	2002	2003	Percent of Total Quantity in 2003	Percent change (1999-2003)
Dioxin and Dioxin-like Compounds	0	641	708	551	709	0.0%	NA
Lindane	2,722	64	46	183	71	0.0%	-97.4%
Heptachlor	0	0	0	79	54	0.0%	NA
Methoxychlor	0	17	1	1	0	0.0%	NA
Total	77,252,326	99,642,648	84,015,526	79,250,350	79,232,695	100.0%	2.6%
Note: For some chemical quantities, a zero (0) was inserted for one or more of the following reasons: 1) Prior to 2000, benzo(g,h,i)perylene, dioxin and dioxin-like compounds, and Pentachlorobenzene were not reportable TRI quantities, 2) no quantity was reported to TRI, 3) based on our rounding-off process, quantities reported to TRI as <0.5 lbs are shown as zero quantity.							

PCs, such as naphthalene, hexachloro-1,3-butadiene, hexachlorobenzene, and hexachloroethane, decreased significantly in quantity from 1999-2003. Exhibit 5 shows the national trends regarding the management methods used for the PCs. Disposal quantities have increased, especially onsite disposal. The energy recovery quantity has remained somewhat constant with an increase of about 1.1 million pounds going to onsite energy recovery along with a corresponding decrease of offsite energy recovery quantity. There has been a decrease of approximately 3.5 million pounds in the total treatment quantity – mostly offsite treatment. Although not counted as PC quantities (as explained later in the report), recycling, both onsite and offsite, has decreased, compared to the 1999 quantities. Onsite recycling of the PCs has consistently been around 425 million pounds from 2001 through 2003. In 2003, there was a decrease in recycling of about 208 million pounds. Despite the 25 percent decline in recycling since 1999, it is apparent that a majority of PCs have been and continue to be recycled. The hierarchy of pollution prevention/waste minimization management techniques, recommends recycling practices over treatment, energy recovery or disposal practices. The NPEP Program will continue to encourage recycling as one of its target objectives.

Exhibit 5. Trends in Management Methods for Priority Chemicals (1999-2003)

Management Method	Reporting Year				
	1999	2000	2001	2002	2003
Onsite Disposal	4,129,059	4,107,453	7,619,488	9,124,600	9,071,816
Offsite Disposal	29,937,003	33,226,387	30,436,117	27,961,944	30,589,106
Total Disposal	34,066,063	37,333,840	38,055,605	37,086,543	39,660,922
Onsite Energy Recovery	8,593,952	14,319,579	13,980,311	10,497,403	9,691,116
Offsite Energy Recovery	3,546,248	6,531,633	2,775,823	5,468,495	2,402,434
Total Energy Recovery	12,140,200	20,851,212	16,756,134	15,965,898	12,093,550
Onsite Treatment	26,395,997	35,655,905	26,727,256	24,761,134	26,028,974
Offsite Treatment	4,650,067	5,801,691	2,476,531	1,436,775	1,449,249
Total Treatment	31,046,064	41,457,597	29,203,787	26,197,909	27,478,223
Onsite Recycling	572,683,510	534,083,436	424,174,241	425,762,445	427,154,153
Offsite Recycling	276,392,151	255,700,460	249,330,474	281,847,907	213,044,100
Total Recycling	849,075,661	789,783,897	673,504,715	707,610,352	640,198,253

Regional Trends for the Priority Chemicals. Four of the Regions (Regions 2, 3, 5, and 10) had a decrease of more than one million pounds in PC quantities. Region 7 had an increase of over 4.6 million pounds. Four EPA Regions had over 80 percent of the total quantity of PCs in 2003 – Region 6 (39.3%), Region 4 (16.8%), Region 5 (16.3%), and Region 7 (9.9%).

Exhibit 6. Priority Chemical Quantities (lbs) by EPA Region (1999 – 2003)

EPA Region	1999	2000	2001	2002	2003	Percent of Total Quantity in 2003	Percent Change (1999-2003)
1	525,016	684,861	1,288,898	986,650	1,009,289	1.3%	92.2%
2	3,708,832	3,778,794	2,514,404	1,774,434	1,657,514	2.1%	-55.3%
3	6,378,497	6,870,818	8,231,857	4,673,141	5,362,340	6.8%	-15.9%
4	12,199,897	15,682,639	13,179,721	10,980,492	13,321,440	16.8%	9.2%
5	14,039,745	12,941,398	11,262,484	14,347,790	12,896,587	16.3%	-8.1%
6	31,086,511	44,117,121	34,425,819	33,794,476	31,168,159	39.3%	0.3%
7	3,214,109	6,865,892	6,138,039	6,806,476	7,863,422	9.9%	144.7%
8	1,137,281	1,610,228	1,360,725	1,155,555	1,483,026	1.9%	30.4%
9	1,748,944	3,251,743	2,969,640	2,855,807	2,627,186	3.3%	50.2%
10	3,213,494	3,839,153	2,643,938	1,875,528	1,843,732	2.3%	-42.6%
Total	77,252,326	99,642,648	84,015,526	79,250,350	79,232,695	100.0%	2.6%

State/Territory Trends for the Priority Chemicals. Four states accounted for approximately 50 percent of the PCs in 2003 – Louisiana (21.1 percent), Texas (14.3 percent), Indiana (7.9 percent), and Missouri (6.6 percent).

Exhibit 7. Priority Chemical Quantity (lbs) by State (1999-2003)

STATE	1999	2000	2001	2002	2003	Quantity Change (1999-2003)	Percent Change (1999-2003)	Percent of Total Quantity in 2003
AK	0	2,494	25,452	30,306	22,748	22,748	NA	0.0%
AL	2,709,725	2,123,769	2,556,493	4,034,609	3,555,622	845,897	31.2%	4.5%
AR	2,646,546	3,804,040	3,173,953	2,098,513	2,090,351	-556,195	-21.0%	2.6%
AS	0	134	129	0	0	0	NA	0.0%
AZ	44,216	11,185	94,717	62,832	66,113	21,897	49.5%	0.1%
CA	1,687,425	3,230,756	2,719,567	2,478,129	2,222,565	535,140	31.7%	2.8%
CO	62,392	65,515	98,394	96,706	183,709	121,317	194.4%	0.2%
CT	100,509	164,729	143,142	88,411	103,185	2,676	2.7%	0.1%
DC	0	0	960	756	290	290	NA	0.0%
DE	102,582	100,882	10,184	6,672	14,546	-88,036	-85.8%	0.0%
FL	455,709	342,908	621,730	598,019	633,838	178,129	39.1%	0.8%
GA	1,550,453	1,368,547	661,641	857,489	725,966	-824,487	-53.2%	0.9%
GU	28	296	5,447	16	19	-9	-32.8%	0.0%
HI	1,775	1,380	122,219	85,114	98,317	96,542	5439.0%	0.1%
IA	1,106,191	1,156,323	926,531	1,037,108	1,094,882	-11,309	-1.0%	1.4%
ID	641,623	525,956	479,361	339,713	268,595	-373,028	-58.1%	0.3%
IL	2,638,276	2,728,966	1,927,188	1,839,386	1,825,428	-812,849	-30.8%	2.3%

STATE	1999	2000	2001	2002	2003	Quantity Change (1999-2003)	Percent Change (1999-2003)	Percent of Total Quantity in 2003
IN	4,479,811	4,224,006	3,774,765	5,654,748	6,241,772	1,761,961	39.3%	7.9%
KS	199,746	84,455	129,761	111,038	110,247	-89,499	-44.8%	0.1%
KY	938,040	1,211,831	1,325,567	1,362,144	3,505,603	2,567,563	273.7%	4.4%
LA	11,789,287	20,090,538	16,143,542	13,467,405	16,714,766	4,925,479	41.8%	21.1%
MA	272,654	331,813	225,129	144,528	142,752	-129,902	-47.6%	0.2%
MD	82,627	366,133	747,715	309,218	148,832	66,205	80.1%	0.2%
ME	8,099	3,339	817,742	609,821	595,361	587,262	7251.0%	0.8%
MI	796,738	468,867	817,845	604,782	788,319	-8,419	-1.1%	1.0%
MN	434,490	399,771	500,892	487,941	546,928	112,438	25.9%	0.7%
MO	1,533,932	3,169,384	3,814,598	4,346,745	5,226,068	3,692,136	240.7%	6.6%
MP	0	0	2	2	2	2	NA	0.0%
MS	458,158	437,236	524,756	345,610	479,205	21,047	4.6%	0.6%
MT	10,274	12,388	6,390	9,250	10,898	624	6.1%	0.0%
NC	258,817	736,519	1,036,159	952,032	1,211,752	952,935	368.2%	1.5%
ND	7,081	3,250	5,743	7,323	9,145	2,064	29.1%	0.0%
NE	374,240	2,455,729	1,267,149	1,311,585	1,432,225	1,057,985	282.7%	1.8%
NH	41,374	97,027	61,468	111,803	127,448	86,074	208.0%	0.2%
NJ	2,708,337	2,940,106	1,682,357	967,570	914,914	-1,793,423	-66.2%	1.2%
NM	18,115	34,001	79,277	159,094	75,102	56,987	314.6%	0.1%
NV	15,500	7,992	27,560	229,713	240,171	224,671	1449.5%	0.3%
NY	993,392	803,539	773,829	748,464	687,379	-306,013	-30.8%	0.9%
OH	5,342,187	4,783,714	3,793,766	5,281,784	2,884,695	-2,457,492	-46.0%	3.6%
OK	450,564	602,418	704,747	1,939,780	978,246	527,682	117.1%	1.2%
OR	993,427	954,723	818,916	648,238	618,896	-374,531	-37.7%	0.8%
PA	5,241,034	5,142,503	4,363,784	2,952,758	3,591,425	-1,649,609	-31.5%	4.5%
PR	6,679	34,689	57,317	57,793	52,708	46,029	689.2%	0.1%
RI	23,505	49,576	18,322	15,692	30,252	6,747	28.7%	0.0%
SC	1,028,916	1,905,751	1,668,565	1,427,095	1,326,311	297,395	28.9%	1.7%
SD	2,065	1,667	3,954	3,911	2,605	540	26.2%	0.0%
TN	4,800,079	7,556,079	4,784,809	1,403,495	1,883,144	-2,916,935	-60.8%	2.4%
TX	16,181,999	19,586,124	14,324,300	16,129,685	11,309,694	-4,872,305	-30.1%	14.3%
UT	751,701	1,006,014	888,591	928,198	1,183,672	431,971	57.5%	1.5%
VA	564,512	568,551	951,728	744,961	692,333	127,821	22.6%	0.9%
VI	424	461	902	608	2,512	2,088	492.5%	0.0%
VT	78,875	38,377	23,095	16,395	10,291	-68,584	-87.0%	0.0%
WA	1,578,444	2,355,980	1,320,209	857,272	933,493	-644,951	-40.9%	1.2%
WI	348,243	336,074	448,028	479,149	609,445	261,202	75.0%	0.8%
WV	387,742	692,750	2,157,486	658,777	914,914	527,172	136.0%	1.2%
WY	303,768	521,394	357,653	110,168	92,996	-210,772	-69.4%	0.1%

Twenty of the States/Territories had a decreased quantity of PCs in 2003, compared to 1999. A decrease of over 1 million pounds was accomplished in five of these states: Texas (-4.9 million pounds, -30%), Tennessee (- 2.9 million pounds, -61%), Ohio (-2.5 million pounds, - 46%), New Jersey (-1.8 million pounds, - 66%), and Pennsylvania (- 1.6 million pounds, - 32%).

Of the thirty-five states/territories that had an increased quantity of PCs in 2003, compared to 1999, five states had an increase of over 1 million pounds of PCs – Louisiana (+4.9 million pounds, +42%), Missouri (+ 3.7 million pounds, +241%), Kentucky (+2,6 million pounds, + 274%), Indiana (+1.8 million pounds, +39%), and Nebraska (+1.1 million pounds, + 283%).

Industry Sector Trends for the Priority Chemicals. Exhibit 8 presents the PC quantities (1999-2003) for those 24 industry sectors (SICs) that accounted for 90 percent of the total quantity of PCs in 2003. Five industry sectors accounted for over 50 percent of the total quantity of the PCs in 2003: SIC 3341- Secondary non-ferrous metals (16.3%), SIC 2869 - Industrial organic chemicals nec (10.7%), SIC 3312-Blast furnaces and steel mills (10 %), SIC 2812- Alkalies and chlorine (9.4%), and SIC 2895- Carbon Black (95.1%).

Exhibit 8. Quantity (lbs) of Priority Chemicals in the Industry Sectors (SICs) that Accounted for 90 Percent of the Total Priority Chemical Quantity in 2003

SIC Code	SIC Description	1999	2000	2001	2002	2003	Percent of Total Quantity in 2003	Change in Quantity 1999-2003
3341	Secondary nonferrous metals	7,476,809	10,527,825	9,720,459	11,993,360	12,933,583	16.3%	5,456,774
2869	Industrial organic chemicals, nec	2,491,268	3,476,162	2,161,860	6,768,248	8,466,025	10.7%	5,974,757
3312	Blast furnaces and steel mills	9,082,485	9,603,363	7,940,587	7,010,168	7,901,057	10.0%	-1,181,428
2812	Alkalies and chlorine	18,732,394	23,417,510	18,975,349	12,511,312	7,456,586	9.4%	-11,275,808
2895	Carbon black	0	3,749,053	3,454,362	3,922,074	4,052,612	5.1%	4,052,612
2819	Industrial inorganic chemicals, nec	3,677,861	5,955,886	3,435,952	2,887,421	3,426,548	4.3%	-251,313
2911	Petroleum refining	4,711,108	6,175,607	2,234,706	4,199,005	3,405,412	4.3%	-1,305,696
3624	Carbon and graphite products	5,067,118	8,300,424	5,119,620	1,834,267	2,891,018	3.6%	-2,176,100
3334	Primary aluminum	2,328,131	3,470,641	2,197,738	1,849,099	2,845,041	3.6%	516,910
9711	National security	71,606	163,504	2,228,042	2,605,080	2,787,601	3.5%	2,715,995
3479	Metal coating and allied services	1,468,003	1,819,255	1,648,889	2,461,943	2,712,495	3.4%	1,244,492
3321	Gray and ductile iron foundries	1,101,863	1,108,568	2,682,182	2,980,670	2,547,436	3.2%	1,445,573
2865	Cyclic crudes and intermediates	2,645,340	1,990,790	1,432,105	3,103,126	1,639,150	2.1%	-1,006,190
2821	Plastics materials and resins	942,386	836,036	565,677	746,511	1,387,892	1.8%	445,506
9511	Air, water, and solid waste management	92,065	375,078	652,869	615,034	1,273,657	1.6%	1,181,592
3229	Pressed and blown glass, nec	1,984,537	1,730,917	1,545,626	1,299,721	1,171,476	1.5%	-813,061

SIC Code	SIC Description	1999	2000	2001	2002	2003	Percent of Total Quantity in 2003	Change in Quantity 1999-2003
2879	Pesticides and agricultural chemicals, nec	647,551	1,608,582	2,112,046	758,430	929,347	1.2%	281,796
2491	Wood preserving	177,443	330,966	623,516	456,129	597,763	0.8%	420,320
3691	Storage batteries	1,037,024	788,534	291,592	338,077	557,907	0.7%	-479,118
3315	Steel wire and related products	1,531,147	955,199	795,911	421,571	502,771	0.6%	-1,028,376
3357	Nonferrous wire drawing and insulating	1,271,536	520,149	509,831	351,195	486,727	0.6%	-784,809
2992	Lubricating oils and greases	320	356,966	340,985	434,100	459,677	0.6%	459,357
8733	Noncommercial research organizations	100,105	153	203,452	153,948	426,650	0.5%	326,545
2037	Frozen fruits and vegetables	0	0	376,146	420,737	415,447	0.5%	415,447

Trends Analyses for the Priority Chemicals Reported by Federal Facilities

An analysis of the generation/management trends for the PCs reported by Federal Facilities is provided in Section 5. This analysis of how PCs are generated and managed by Federal Facilities that report PCs to TRI is separate and distinct from the requirements of Executive Order 13148 – including the mandate that Federal Facilities develop a plan to reduce the use of certain identified PCs and submit annual reports regarding progress being made to reduce the use of these chemicals. This Trends Report shows trends regarding the generation and management of the 23 PCs. As previously noted, the purposes of this Trends Report (and database) are: to 1) track progress made toward GPRA goals to reduce the presence of the PCs in wastes and 2) provide data to assist efforts for identifying voluntary potential waste minimization opportunities that present source reduction and recycling as alternatives to land disposal, treatment, and energy recovery.

In 2000 and, again in 2001, there were significant increases in both the quantity and number of reporting Federal Facilities, compared to 1999. In 2003, 192 Federal Facilities reported over 4.1 million pounds of PCs. This represents about 5 percent of the total quantity of PCs reported by all facilities (Federal + non-Federal) in 2003. Only a relatively small number of Federal Facilities accounted for the majority of the total quantity of PCs reported. Of the 192 Federal Facilities that reported a PC quantity in 2003, only 10 Federal Facilities accounted for almost 54 percent of the total quantity; 50 Federal Facilities accounted for almost 95 percent of the total quantity.

In 1999-2003, Federal Facilities in 48 states and Washington, D.C. reported a PC quantity. Federal Facilities in 16 states accounting for over 90 percent of the total quantity reported by Federal Facilities in 2003. Lead and Lead Compounds comprised almost 97 percent of the total quantity of 7 PCs reported by Federal Facilities in 2003. In 2003, Federal Facilities in two agencies, the Department of Defense and Department of Energy reported 97 percent of the total quantity of lead and lead compounds, 100 percent of mercury and mercury compounds, and 100 percent of the PACs. About 97 percent of the PCs reported by Federal Facilities in 2003 were land disposed, primarily onsite. Please refer to Section 5 for more details.

OSW Goals

The 1993 Government Performance and Results Act (GPRA) directs Federal Agencies to establish strategic plans using long and short range goals, in a 5-year planning cycle updated every 3 years. EPA's current strategic plan sets goals for 2008 and supersedes our 2005 strategic goal. OSW achieved the previous GPRA goal of a 50 percent reduction in the total quantity of 17 PCs in hazardous waste by the year 2005, as compared to the quantity in the baseline year of 1991, in 2001. Since OSW is now focusing efforts on the new GPRA goal (2008), the previous GPRA goal (2005) will be discussed in section 2.

The OSW GPRA Goal (2008 GPRA Goal)

Reduce, by 10 percent, the total quantity of 23 Priority Chemicals in hazardous and non-hazardous wastes by the year 2008, as compared to the quantity in the baseline year of 2001.

As of 2003, there was a 5.7 percent reduction in the total quantity of PCs contained in wastes (exhibit 9).

Exhibit 9. National Progress Made Toward the GPRA Goal

Reporting Year	2001	2002	2003
Total Quantity (lbs)	84,015,526	79,250,350	79,232,695
Percent Change from Baseline Year (2001)	Baseline Year	-5.7%	-5.7%

Exhibit 10 shows the quantities and percent change in quantity of each of the 23 PCs that were reported to the TRI for 2001 through 2003.

Exhibit 10. National GPRA Quantity (lbs) of Priority Chemicals (2001-2003)

CHEMICAL NAME	2001	2002	2003	Percent Reduction (2001-2003)
Lead and Lead Compounds	36,996,580	34,907,262	36,667,276	-0.9%
Polycyclic Aromatic Compounds	14,115,733	12,771,563	12,672,606	-10.2%
Naphthalene	10,340,355	11,248,654	10,399,334	0.6%
Hexachloro-1,3-Butadiene	6,404,741	5,167,385	5,566,299	-13.1%
Hexachlorobenzene	5,765,862	4,208,878	4,272,727	-25.9%
Hexachloroethane	4,145,249	4,056,497	2,734,341	-34.0%
Phenanthrene	236,212	2,309,275	1,817,292	669.3%

CHEMICAL NAME	2001	2002	2003	Percent Reduction (2001-2003)
1,2,4 - Trichlorobenzene	2,182,996	1,527,029	1,674,271	-23.3%
Cadmium and Cadmium Compounds	932,493	749,570	817,579	-12.3%
Quintozone	491,098	412,230	604,434	23.1%
Pentachlorobenzene	487,719	311,156	484,733	-0.6%
Pendimethalin	200,195	421,827	429,551	114.6%
Anthracene	360,830	345,482	419,068	16.1%
Benzo(g,h,i)Perylene	988,675	308,362	315,294	-68.1%
Pentachlorophenol	54,339	36,856	160,760	195.8%
Dibenzofuran	66,720	288,912	75,605	13.3%
Trifluralin	93,489	63,555	57,290	-38.7%
Mercury and Mercury Compounds	130,828	97,130	40,544	-69.0%
2,4,5 - Trichlorophenol	20,657	17,913	22,857	10.7%
Dioxin and Dioxin-Like Compounds	708	551	709	0.1%
Lindane	46	183	71	54.3%
Heptachlor	0	79	54	NA
Methoxychlor	1	1	0	-100.0%
Total	84,015,526	79,250,350	79,232,695	-5.7%

Approximately half of the PCs showed a decrease in quantity since 2001. In 2003, five of these chemicals accounted for 88 percent of the total quantity of PCs, lead and lead compounds (46.3%), polycyclic aromatic compounds (16%), naphthalene (13.1%), hexachloro-1,3-butadiene (7%), and hexachlorobenzene (5.4%).

The OSW Priority Chemicals

What Chemicals are addressed? EPA selected the Toxics Release Inventory (TRI) as the primary data source by which to measure progress toward reducing quantities of PCs in hazardous waste and to track trends in the generation, release, and management of the PCs. The TRI is a publicly available EPA database that contains information on more than 650 toxic chemicals that are being used, manufactured, treated, transported, or released into the environment. This information is reported annually by facilities on TRI Form Rs, and is reviewed and updated on an on-going basis to reflect corrections to reported data resulting from reporters' revised Form Rs and EPA data quality checks². Exhibit 1 lists the 31 chemicals identified by OSW as PCs³. However, only 24 of these 31 chemicals are reported to TRI.

² Data for each year are published approximately 15 to 18 months following the end of the reporting year. For example, aggregated data for reporting year 2003 were published in May 2005. Individual facility data were made public in November 2004.

³ For the purposes of developing this list of 31 chemicals, endosulfan alpha and endosulfan beta were counted together and heptachlor and heptachlor epoxide were counted together. Also, each of the three metals (lead, cadmium, and mercury) is combined with its associated metal compounds and addressed as a single Priority Chemical in this report. For example, lead and lead compounds are addressed as a single Priority Chemical. Only the weight of the metal portion of metal compounds is reported to TRI. Polychlorinated Biphenyls (PCBs) are on the list of Priority Chemicals and are reported to TRI but this chemical is not included in this Trends report because EPA monitors the management of PCBs under a separate initiative.

Therefore, for the purposes of this Trends Report and for tracking progress toward the current GPRA goal (the 2008 GPRA goal), these 24 chemicals are analyzed. For the previous GPRA goal (the 2005 GPRA goal), only those 17 PCs which were reported to TRI since 1991 were tracked. The remaining PCs are not reported to TRI.

Information is reported to the TRI on a chemical-specific basis, rather than by waste stream. Although data reported to TRI includes quantities of chemicals that are contained in the waste, it does not necessarily provide a distinction between hazardous and non-hazardous waste. Furthermore, not all data in the TRI are needed to calculate the PC quantities. The Office of Solid Waste developed a measurement methodology⁴, summarized here and discussed in more detail in Appendix C, to identify and extract the applicable data from the TRI database to calculate PC quantities and estimate what portion of the chemical quantity reported to TRI is likely to be found in RCRA Subtitle C hazardous or in non-Subtitle C (non-hazardous) industrial wastes.

We developed the original methodology for the purpose of estimating the quantity of PCs that was contained in RCRA Subtitle C hazardous wastes⁵. With the declaration of a new GPRA goal by which to further reduce the presence of PCs in waste, we revised the original methodology that had been used to calculate PC quantities for the previous GPRA goal. We derived from this revised methodology data which serve as the basis for tracking progress toward the current GPRA goal and doing trends analyses, as presented in this update of the Trends Report.

To identify and collect data on PCs reported to the TRI in 1999 through 2003 for this report, we used the revised methodology to undertake the following steps:

1. Extract Data Regarding PCs Reported to TRI;
2. Exclude selected TRI data;
3. Identify Relevant Releases and Waste Management Quantities to Calculate PC Quantities; and
4. Analyze Data and Measure Progress Made Toward the GPRA Goal

More detailed information concerning these methodologies can be found in Section 2 and Appendix C. Except for the discussion in Section 2 that provides an update on the progress made toward reducing PCs in hazardous waste per the previous GPRA goal, the data used in this Trends report – pertaining to the current GPRA goal and all other trends analyses – were derived using the revised measurement methodology. Please note that the discussion of the previous GPRA goal presented in this Trends Report is expected to be the last update concerning this goal. Future updates of this Trends Report will focus on the current GPRA goal and trends analyses using data from the revised methodology.

⁴ Please note that the methodology used in developing this Trends Report may differ from the methodology used by the TRI program to show trends for the EPCRA section 313 chemicals in the annual TRI Public Data Release.

⁵ The term “hazardous waste” as used in this Trends Report refers to wastes that are regulated under RCRA Subtitle C, which are listed in 40 CFR 261.20-24 (characteristics of ignitability, corrosivity, reactivity, or toxicity), 40 CFR 260.31 (non-specific source wastes), 40 CFR 260.32 (specific source wastes) or 40 CFR 260.33 (discarded commercial chemical products). Priority Chemicals that are released in air emissions or surface water discharge may not be RCRA Subtitle C hazardous wastes, but may be considered to be hazardous under other regulatory statutes.